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with Compliments of the
Author

ADDRESS,

INTRODUCTORY TO THE

TWELFTH REGULAR SESSION

OF THE

Miami Medical College

OF

CINCINNATI, O. *box 6*

DELIVERED OCTOBER 3d, 1871.

BY

B. F. RICHARDSON, M. D. *✓*

PROFESSOR OF DISEASES OF WOMEN AND CHILDREN.

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TENDENCIES AND MUTATIONS

IN THE

PROGRESS OF MEDICINE.

SANCTIONED by the general custom of Medical Colleges in this country, the present occasion affords opportunity for a discourse markedly at variance in its subject matter, with those which are to follow in the regular course of medical instruction. In other words, discretionary latitude is permitted, whereby others than those of the profession may be entertained and instructed, commensurately with the ability and disposition of the speaker.

I have selected as the basis of my remarks : *Tendencies and Mutations in the Progress of Medicine*. A moment's reflection will suggest that the text chosen is diverse in bearing and comprehensive in scope, and can only be casually and imperfectly considered in the time usually allotted on occasions like this. It is proposed to follow some of these tendencies and mutations to their logical conclusions. They concern the community as well as the profession. It therefore affords pleasure to have, as auditors, some who, it may be presumed, have no intention of matriculating for the regular course. To such we present our thanks for their presence on this occasion, and

shall endeavor so to present our subject as to enable them to form an estimate of the great and numerous difficulties which interpose to prevent the attainment of certainty and perfection in medical science and art, the failure in which has been a fruitful source of opprobrium upon physicians.

GENTLEMEN OF THE CLASS:—In behalf of the Faculty of this Institution, allow me to extend to you a cordial welcome to its halls, and to the hospitalities of this goodly city. Most of you are strangers within our imaginary gates, and, therefore, the greater reason why you should receive at our hands the kindly offices of friendship, as well as such medical instruction as we may prove ourselves capable of imparting. Some of you are here for the first time, others are entering upon their second course, and perhaps some, for the third time, desire to avail themselves of the unusual facilities afforded by this great central city, for the acquisition of practical knowledge in medicine; general, surgical and special.

As most, if not all of you, since entering upon your studies, have probably been devoting your attention somewhat exclusively to the consideration of medicine, as presented by the writers and teachers of the present day, it has been thought not inappropriate on this occasion to succinctly point out some of the more prominent changes that have occurred in the progress of the healing art, through the varying tendencies of medical minds at different epochs in its history. You are entering upon the study of medicine at a time more propitious than any other heretofore presented. The opportunities and instru-

mentalities afforded the present generation, through which to acquire practical knowledge in medicine, are unexampled in the past; and it only remains for us to consider the most profitable mode of appropriating the unprecedented facilities so freely accorded us.

For more than two thousand years medicine has been moving in a circle, so to speak, and is now steadily and surely approaching the field from whence it departed, at the conclusion of what is termed the first epoch of the Alexandrian school of medicine. For four hundred years immediately anterior to the Christian era, observation of pathological and therapeutical phenomena, constituted, to a large extent, the source from whence was derived the astonishing degree of medical knowledge possessed by the physicians of that period.

The Eeulapean school terminated with the disintegration of the Pythagorean Societies, the founder of the latter having died 490 years before the Christian Era, thirty years anterior to the birth of Hippocrates. For some seven hundred years preceding the advent of the latter, the clergy had arrogated to themselves the province of medicine, and practiced the healing art in their temples, exclusively; teaching only those belonging to the sacerdotal brotherhood, all matters pertaining thereto being held sacred and secret.

Hippocrates and his immediate followers beheld the wane of this ecclesiastical charlatanry, without which his name would doubtless have come down to us, if at all, unassociated with that immortal appellation, "father of medicine."

The coming of Hippocrates inaugurated a very remarkable change in the progress of medicine, and the character of that change clearly indicated the tendency of the human mind at that epoch.

Knowing the disabilities under which he labored, it is wonderful that Hippocrates should have been capable of the super-human achievements with which he stands accredited by history. We must not lose sight of the fact, however, that he lived in an age prolific of colossal minds. He had for his immediate cotemporaries—Pericles, Plato, Cimon, Cincinnatus, Xenophon, Anaxagoris, Herodotus, Diogenes, Dionysius, Democritus, Demosthenes, Themistocles, Socrates, Empedocles, and many others, no less famous, whose names have been rendered immortal so far as history can make them so. It has been called the Periclesian age, the most renowned of all antiquity for Philosophy, History, Arms, Statesmanship, Science and Art. These names are as familiar to us as are those of the most eminent men of our own day; yet they all passed from the face of the earth more than two thousand years ago. I have named them not because they were physicians, for most of them were not, but because such mighty minds could not but mold the sentiments of the multitude, and shake their confidence in mummeries born of ignorance, superstition and consequent credulity. Under the combined influence of such intellects, the ecclesiastical jugglery in medicine, which had for so many centuries held undisputed sway, was unable longer to defend and maintain itself.

It is alleged that the Pythagorean Societies, the last of

the Eseulapian schools, were dispersed through perseeution. It is far more probable that the mystieal delusions which so largely eharacterized clerieal medieine, could withstand no longer the light and wisdom that illuminated and direeted the Hippoeatie age, rendering the minds of the people tolerant of the grand innovations in medieine, made by Hippoeates and his followers. In faet, even before the birth of the sage of Cos, the soeieties of Pythagoras were being dissolved, and his disciples were making serious eneeachments upon the mystie ordinances of the temples. They had divulged many of the secrets through which the people had been infatuated and deluded, and had inaugurated the custom of visiting patients at their houses, a custom that has continued in vogue to the present day, exept by those, who, in imitation of their prototypes, the Eseulapian impostors, advertise to treat their patients in their own private establishments, with the preliminary condition of a round fee, always payable in advance.

The school of Cos, on the island of Cos, since named Staneo, the birth-place of Hippoeates, was the most noted of the three priniepal Pythagorian schools. It was with this school that Hippoeates was identified, and it was his genius, erudition, mental profundity, force of eharacter, and above all, his eandor and truthfulness, which gave to it a reputation that long survived him, and seoured for it the foremost position in medieal teaching, until superseded by the Alexandrian school: which was instituted soon after the establishment of its celebrated library, in the year 320, before the Christian era; being some sixty years after the death of Hippoeates.

Allusion has been made to the philosophical tendency which marked the Periclesian age in which Hippocrates was born, he being thirty-one years old at the death of Pericles. The mutation in the progress of medicine, the most noted in its history; brought about by Hippocrates, was the logical result of intelligent and fearless investigation into the stereotyped medical charlatantry that had characterized all antiquity. The revolution in medicine achieved by Hippocrates was soon followed by another innovation quite as startling as was that of the latter upon clerical domination in matters corporeal; which, for the first time, entitled medicine to the claim of being a science.

From all antiquity there had existed a superstitious regard and repulsive dread as to the human dead, which totally interdicted their dissections for scientific or other purposes; and there are substantial reasons for believing, that anterior to the creation of the Alexandrian school, no thorough autopsy had ever been made of the human body. Consequently an insuperable barrier had always been interposed to the acquisition of anatomical, physiological, and pathological knowledge, so far as pertains to the human species.

At last this barrier which had obstructed medical progress for untold ages, was demolished through the humanity and will of one man. After the death of Alexander the Great, 323 years before the Christian era, Ptolemy Philadelphus, Lagus, or Soter, as he has been differently called by writers, the natural son of Philip of Macedon, and therefore half brother to Alexander,

created Egypt a separate kingdom over which he ruled, designating the city of Alexandria as its Capitol. His courage, philanthropy and munificence, but more especially his patronage of the Arts and Sciences, which, through the impetus given by him, flourished in an extraordinary degree for some centuries thereafter, entitled him to the gratitude of all posterity. In the third year of his reign he founded the celebrated Alexandrian Library, which, during the thousand years of its existence, had no peer.

Upon this foundation he instituted a school of medicine in conjunction with other departments of learning. In defiance of the superstition and bitter prejudice of ages, he not only permitted, but actually authorized the dissection of human bodies; and in order to aid in the eradication of that prejudice which had always proved successful in preventing human dissections, it is said that himself and members of his Court participated in the cadaveric investigations. During the remainder of his life, which terminated thirty-five years thereafter, he was indefatigable in building up his library, and in fostering and encouraging the various schools therewith connected, particularly that of medicine. And this occurred twenty-one hundred years ago, in what we are pleased to denominate a pagan age! How favorably, in this respect, it compares with our boasted age of enlightenment and non-superstition! For even at this day, in many of our States, the dissection of the human body is practically prevented, except under hazard of severe legal pains and penalties; and that too at the hands of a people who unconditionally

demand the highest order of talent and skill on the part of their medical attendants. Until very recently, every physician of this State who sought to obtain knowledge of the human frame through personal inspection, was, in the eye of the law, a criminal, and took upon himself besides the opprobrium of the community. We have not as yet, reached the unobstructed field of practical and experimental medicine, enjoyed by the disciples of the Alexandrian school during its first epoch.

The history of medicine furnishes no parallel to the rapid progress made in practical medicine during the second and third centuries before the Christian era. In the midst of that second century, however, forward progress had reached its acme, and there was in reserve for this humane art, discouragement and serious disaster in the near future. The successors of the noble Ptolemy Soter, did not partake of his wise and generous nature, and at this particular period revoked the privilege of free and unrestrained anatomical investigations, and soon annulled the privilege altogether. Close upon the disability thus inflicted, by which progress was so impeded, came a most serious calamity, from which medicine did not recover for fifteen centuries. The Roman conquest of Egypt by Julius Cæsar, involved the entire destruction of the great Alexandrian Library. As if this stupendous and irreparable loss was not sufficiently disastrous, the infamous Caracalla, after the transfer of the Purgamus Library to Alexandria, in substitution of the loss of its own, practically disbanded the medical school, by wresting from it its most vital and essential privileges.

The Christian era opened on medicine in the hour of its greatest trials and discouragements. Although Alexandria continued to be the center of medical education, down to the second and final destruction of its great library by the Arabs, in the year 640, of the Christian era; the facilities for acquiring medical knowledge no longer equalled those of the first epoch. At last, when the Arabian vandals, with torch and sword in hand, swept over the face of Egypt, spreading desolation in their path, they entered its magnificent Capitol, and destroyed its grand old library, the treasury of a thousand years of intellectual toil. It contained three quarters of a million of manuscript volumes, which these unsanctified wretches consumed as fuel in heating their baths. Thus ignobly perished the most wonderful library the world ever saw, for it was the sole work of men's hands, the art of printing being then unknown. With the going out of its great light, came darkness over the world for eight hundred years, until the glimmering of reviving letters began to break upon it during the fifteenth century.

To the verge of tediousness, I have dwelt upon the Hippocratic and first Alexandrian epochs in the history of medicine, for two main reasons. First: these epochs, which covered a period of four centuries immediately preceding the advent of Christ, contributed to medicine more elementary knowledge, than has any other period in its history, of like duration. Second: for fourteen centuries thereafter, as a science, it was poorly sustained by the barren speculative theories of egotistical and controvertial minds; and as an art was enriched by but few valuable contributions.

Omitting the writings of Celsus and Galen, we might pass over this long period in silence, without sustaining grievous loss; for but little can be gleaned from it favorable to medicine or flattering to our professional pride. We should, however, revere the names of Celsus and Galen, the former a Roman of the Cornelian family, who lived in the fore part of the first century; and the latter, a native of Pergamns, now called Bergamo, in Asia Minor, who flourished during the last half of the second century. It is highly probable that through their writings, especially those of Galen, we are to-day in possession of many of the rich fruits of the Alexandrian school, which, it has been supposed, were entirely lost, in the first destruction of the Alexandrian Library by Julius Cæsar.

Renouard, in his history of medicine, makes the following statement:—"The labors of the physicians who illustrated the first epoch of the school of Alexandria, are all lost; we only know of them now by tradition, and by fragments that writers of a later period have preserved." This statement he subsequently repeats. With due deference to so high an authority, there are good reasons for entertaining a contrary belief.

That Celsus and Galen, particularly the latter, obtained the greater part of their elementary knowledge of medicine from the manuscript copies of the re-established Alexandrian Library, there are substantial grounds for believing. Galen, as we have remarked, was a native of what was then called Pergamus, an inland city, north of Smyrna, in Asia Minor. He is the accredited author of some seven hundred and fifty volumes and essays on me-

dicine. If we are to believe the account of his great popularity as a practicing physician, while a resident of Rome, which comprised the greater part of his adult life, it is simply impossible that he should have been able to accomplish so much in this direction, without drawing very largely from the labors of his predecessors. He was but the prototype of those who, being blest with large cumulative capacity, constantly pour out as original, the products of other men's brains. I suppose, like the poor, we must have them with us always.

But to resume: In the city of Pergamus, Galen's birth-place, there was established a library, second only to that of Alexandria, and so nearly at the same time as to have started the question of priority. These were the only libraries of repute until that of Constantine, founded six centuries thereafter in Constantinople.

It is a matter of history that the librarians of Pergamus, copied extensively from the Alexandrian manuscripts. In fact, this practice was carried to such an extent, that in order to arrest it, the Egyptian government finally interdicted the exportation of papyrus, the bark paper on which, until then, all manuscripts were written.

The Pergamus librarians being thus summarily deprived of an article so indispensable, manufactured parchment, and to this incident we owe its use at the present day.

This library had existed nearly three hundred years, when, soon after the destruction of that of Alexandria by Julius Cæsar, it was transferred to that city by Marcus

Antonius, through the importunities of Cleopatra, then Queen of Egypt.

This event has an important bearing as to the source of Galen's elementary knowledge of medicine. The transfer and substitution of the Pergamus Library for that of Alexandria, occurred about two centuries before Galen visited Alexandria, for the sole purpose of acquiring medical knowledge. To this library he had unlimited access for several years, and it contained an indefinite number of manuscripts, copied from that of Alexandria, before its destruction.

During this period of his life, only, could he have had sufficient time and opportunity to treasure up the large amount of material contained in his voluminous writings; for, after his return to Pergamus from Alexandria, when twenty-eight years old, he passed only about four years of the remainder of his life away from Rome; a city that has produced no name famous in the annals of medicine, save that of Celsus, nor permitted the pursuit of human anatomy; without which anatomical, physiological and pathological knowledge was to him unattainable.

At the age of thirty-two, four years after his return from Alexandria, he went to Rome and established himself in practice, soon acquiring great fame and importance, in consequence, it is said, of his large and diversified acquirements. Within five years, however, he was compelled to abandon that city, and return to his native place, in consequence of some unfortunate traits of character, the most prominent of which was his excessive egotism and consequent contempt, openly expressed, for the

attainments of his fellow practitioners ; a kind of men, it is to be regretted, as yet not entirely extinct.

He was soon recalled to Rome by those in power, and there spent the remainder of his days in the enjoyment of a large practice under royal favor, dieing at the age of seventy, in the two hundredth year of the Christian era.

Although Galen lauded and ostensibly esteemed Hippocrates above his professional successors in the school of Alexandria, and professed only to re-assert his doctrines which he avers the latter obscured and perverted ; it is very evident from his writings, that most of the elementary knowledge on which, to a large extent, rests his fame, was derived from the labors of those he seems so ready to disparage.

The degree of minuteness and comprehensiveness in his descriptions, his physiological deductions, and orderly enumeration of pathological phenomena, objective and subjective, unmistakably indicate a source of knowledge, much richer in such materials than are the writings of Hippocrates.

In view of all this, we are at least justified in entertaining the opinion that "the labors of the physicians who illustrated the first epoch of the school of Alexandria," are not all lost, but have, at least in large part, come down to us through the writings of Galen. As the doctrines of this famous physician governed the medical world for fourteen centuries, and their essence has tintured the writings of medical authors almost to the present hour ; I may be excused for presenting a brief summary of their essential features.

Like Hippocrates and all others who have sought to determine, by reason alone, the intimate relation between therapeutics and pathology; Galen was a dogmatist. Though he professed independence of all sects, he endorsed and defended the doctrines of Hippocrates, the father of dogmatism, as well as of medicine. He was in full accord with the latter in the doctrine, that all medicines acted on disease by contrariety, in conformity with the ruling belief during many centuries. He denied unity of element in man, and held to a tri-unity of spirits, humors and solids. These, under subdivision, still retained their relative identity. With Aristotle, he recognized four primitive qualities; heat, cold, dryness and moisture. Relative preponderance or diminution in either, constituted disease. Fire, air, earth and water, embody them in the highest degree, being representative bodies. The soul he held to be a tri-unity of qualities; vegetative, emotional and rational; having for their residence respectively, the liver, heart and brain. Each of these qualities is aided by any desired number of subordinate faculties.

The same facilities, afforded by an active imagination, sufficed, in pathological and physiological elucidations. He assumed eight temperaments, which enabled him to readily explain any extent of phenomenal diversity in health or disease. Nor did his mental ingenuity fail him in his therapeutical explanations. The intrinsic qualities of drugs were determined by their effects. When a drug produced a sense of heat or cold, fire or cold predominated in it, and so on for quantity. These are types of the

groundless assumptions which characterize his reasoning throughout.

We are disposed to extenuate the absurdity of all this, because such notions were entertained 1700 years ago, but we need go back but little over a century past, to find pathological and therapeutical theories accepted by the profession, still more absurd than these, if that were possible.

As was intimated in the commencement of this discourse, the baneful theories which have clogged medicine in its progress, are but the logical results of attempting to explain those things, which, in their very nature are beyond explanation.

The doctrines of Galen having governed the medical fraternity, down to the sixteenth century, sufficiently indicates the want of progress in the right direction.

After Galen, and during the decline of the Roman Empire, the moral and intellectual character of her people degenerated, and medicine, in common with the other sciences, retrograded.

When the Goths inundated Italy in the fifth century, learning, as well as the Roman Empire, was extinguished, and the clouds of the coming darkness overshadowed the East, and needed only the conquest of Egypt and Asia, by the Arabs, in the seventh century, to draw the veil over the human intellect, no more to be penetrated, until the light of the fifteenth century should break through it.

Under the Arabians, medicine lost infinitely more than it gained; their knowledge being almost wholly derived from the Greeks, whose writings they but imperfectly translated.

The four or five Arabian authors whose names have come down to us, made but few original contributions to the science and art of medicine. Rhazes, born in Rhei, in the province of Khorasan, in 852, dying at the age of eighty years, in 932, was the first to write a book on the diseases of children, and to clearly describe Small Pox. Avicenna, of Bokhara, also in the province of Khorasan, born in 980, was of high repute among the Arabians. His works were used as text books in the European colleges, as late as the middle of the seventeenth century. He died at the age of fifty-eight, of dysentery; his life having been shortened through intemperance. Albucasis flourished during the latter part of the eleventh and beginning of the twelfth centuries, dying in 1122. He was the first to describe and delineate surgical instruments. These three writers are the most prominent representatives of the Arabian period.

While medicine thus languished under Saracenic domination, the medical writings of the Ancients, especially those of Galen, were treasured up in the then great library of Constantinople, founded by Constantine in the third century, and said to contain 300,000 volumes.

When this city was taken and sacked by the Turks, in the middle of the fifteenth century, the educated Greeks escaped and carried with them to the nations of Western Europe, the Grecian authors on medicine, which, being translated, were gradually disseminated through all Europe. Thus were preserved to us the writings of Galen and others of the Ancients.

The revival of medicine, in common with the other

arts and sciences, commenced in the latter part of the fifteenth century, and to the Italians we are indebted for its restoration. But they were still under the shadow of the Galenic doctrines, and made but slow progress.

Although Roger Bacon, the philosopher and scientist, who flourished during the middle of the thirteenth century ; had shaken the foundations upon which the philosophical abstractions of Aristotle were reared, and in accordance with which Galen constructed his subtle system of medicine ; still, in pathology and especially therapeutics, the authority of the latter ruled supreme.

It is not proposed to tax your patience by reviewing the numerous antagonizing theories of the humoralists, solidists and pathists, which have, for centuries past, afflicted humanity, and defaced by unseemly ruts, the great highway of scientific medicine. Unfortunately for science and mankind, the tendency has been to speculate rather than demonstrate, and as logical results we have had successive crops of theories and systems equally fallacious and absurd. Medicine, as a science, can only be sustained upon the broad basis of well established laws, deduced from manifestations sufficiently numerous and uniform. A mere theory is always at the mercy of ascertainable facts.

Aside from acknowledged errors and defects entailed upon scientific medicine, we are in possession of data sufficiently abundant to enable us to dispense with the unsupported theories and unwarranted deductions that have so long encumbered it. As a matter of fact, all that we actually know in medicine, has been derived from

experimental observation, whatever may be claimed in behalf of mere reasoning, to the contrary.

When medicine began to revive in the latter part of the fifteenth, and commencement of the sixteenth centuries; it was Anatomy which at first, and for a long time, felt the impulse of the new life that was being infused into medical culture. Andrew Vesalius, born at Brussels in 1514, invaded the domain of Anatomy, and fearlessly laid bare the deficiencies and errors of Galen, in defiance of general denunciation—the penalty attached to all great innovations. In 1539, one year before the enactment of a law in France for the promotion of anatomical knowledge—the first in any civilized country; he published his famous illustrated work on Anatomy. He had for his cotemporaries, Bartholemew Eustachius, of San Severino; and Gabriel Fallopius, of Modena; who were his peers in anatomical zeal. The rapid improvement in anatomical knowledge made by these three men, probably paved the way to the grand discovery of the true circulation of the blood, by William Harvey in 1616; which, although announced to his classes from that time, was not made public until 1628; the honor of said discovery having been contested in favor of Cæsalpinus, of Pisa; who, it is claimed, clearly pointed it out, June 1st, 1569. Be that as it may, from the time of its public announcement by Harvey, developments have continued, until our knowledge of the human organization, at the present day, is almost complete.

The influence of Harvey's discovery upon the department of physiology, was quite marked, although reliable knowledge in that direction is more difficult of attainment,

and, until recently, advancement has been slow, and much remains to be acquired in this important division. To illustrate:—Although the white corpuscles constitute an important element of the blood, as to relative quantity, we are not yet fully acquainted with their origin or purposes. We do not know the special functions of the thymus and pineal glands, or of the suprarenal capsules. Even the coloring material of the blood is still in question, not to mention our deficiencies in the nervous functionings.

Chemistry and Pharmacy, like Anatomy, being demonstrative sciences, have reached an enviable position. The time in the past, however, is not remote, when it was confidently expected that Animal Chemistry would prove an unerring factor in aid of therapeutics. Experience, that crucial test of unsubstantial things, has demonstrated that its performances come far short of its sanguine promises. Like all other expectations in practical medicine which leave out of view the forever mysteriously modifying power of vitality, its results have been fraught with uncertainty and disappointment.

Surgery, involving as it does, mechanical principles, has made rapid progress within the last thirty years, aided as it has been, by the great proficiency made in Anatomy and Physiology during the present century. Through these collateral supports, conservatism in surgery has resulted.

The Polypharmacy inaugurated by Galen, has enumerated the *Materia Medica* with a multitude of agents, the therapeutical powers of a very large proportion of which are, as yet, but imperfectly determined.

Specialism, in scientific medicine, is true eclecticism, and these abstract departments make rapid progress because of their comparative limitation ; though it is difficult to determine the extent and diversity of knowledge requisite for their most successful prosecution.

It is in Therapeutics, in its broadest sense, that is, practical medicine, that all other departments culminate, and upon which more has been written, and less has been surely determined, than in any other department. It is the aim and end of medical science and art. Through its various instrumentalities we prevent or cure disease, and avert disability or death. In the accomplishment of these ends lies the whole duty of the physician.

It is to be regretted that these desirable achievements are rendered difficult and too often impossible, through influences absolutely beyond our control. The modifying action of disease upon the human organism ; the functional perversions under depressed vitality, occult and incomprehensible in its agency ; the ever varying mental and emotional conditions ; the electrical vicissitudes ; the diverse hygienic surroundings ; and last, but not least, the evil hereditary transmissions ; must forever render uncertain, to a limited extent, the results of therapeutical procedures no matter how much intelligence, patience and care may be employed.

In view of these unavoidable impediments, it becomes the duty of every conscientious physician, to remove as far as possible, every obstacle that may retard approach to certainty in therapeutical results. How is this to be accomplished ? Only through the total abandonment of

all chimerical theories and vain explanations, in regard to the causation and essential nature of diseases, and the *modus operandi* of medicines. This is the last grand mutation required in the progress of medicine, in behalf of the best interests of humanity, and the highest usefulness of medical art. It is the only path that can lead us out of the wilderness of specious theories and circumscribed systems into the broad field of demonstrable facts. It may be asked, is such a course practicable in view of the speculative tendency of the human mind? The present direction of medical investigation would justify an affirmative answer. The royal road which leads to the acquisition of truths in practical medicine, is through judicious experimentation, conjoined with careful, intelligent and orderly observation of pathological and therapeutical phenomena. By these means alone are we enabled to secure reliable results in therapeutics. Just in proportion as we deviate from this golden rule, will the results become vitiated. There is but one degree of departure that can give promise of satisfactory results, and that is, experimentation under rigorous analogy. This is empiricism in its exalted sense, and its faithful carrying out, requires the full exercise of the highest powers of our intellectual and moral nature.

In proportion to the degree of intelligence, candor and probity employed in this direction, will the results be profitable to mankind and creditable to medicine, for thereby we will be able to appropriate to goodly use, the experience of others. From a promiseous assemblage of pathological and therapeutical manifestations, without re-

gard to their constancy, importance or order, it would be impossible to deduce diagnostic or therapeutic laws; and without the establishment of the latter, progress in the right direction would be out of the question.

To promulgate a therapeutical law, determined from erroneous or insufficient data, is to abuse professional confidence; and should therefore be depreciated. For example:—In view of our present knowledge, a therapeutical authority which asserts that transfusion transmutes and permanently cures the hemorrhagic constitution; should sustain its declaration by numerous and faithfully attested cases, in order to render it worthy of acceptance and adoption.

In aid of experimental medicine, no extent of intelligence, industry or discriminating capacity, can compensate for the want of candor and truthfulness. With all these combined, however, advancement in the art of healing is inevitable, and we shall, sooner or later, reach the highest degree towards certainty, attainable in practical medicine.

In conclusion, the following propositions are submitted in support of the views entertained and expressed:

1st. No amount of anatomical, physiological, pathological or chemical knowledge can suggest to our minds, a single therapeutical indication.

2d. There is nothing in the physical or chemical constitution of any drug that will enable us to determine its therapeutical properties or powers.

3d. The only way to certainly ascertain the usual effects of medicines, is through their administration.

4th. A mode of treatment having once cured a particular disease, will do so indefinitely, under similar circumstances.

5th. The therapeutical phenomena resulting from medication under physiological and pathological conditions, will be dissimilar. Therefore, reliable medication in disease, cannot be deduced from physiological experimentation.

6th. The curative power of a therapeutical agent can only be determined by its uncombined employment. To illustrate:—The results obtained from the joint use of electricity and drachm doses of iodide of potassium, in neuralgic or other affections, will determine the curative power of neither.

From these propositions, jointly, it might be inferred that anatomical, physiological, pathological and chemical knowledge is considered valueless in aid of therapeutics, or practical medicine. Not so, however. A thorough acquaintance with all these departments, combined with high proficiency in physical explorations, will assist us immeasurably, in promptness and certainty of diagnosis; enabling us also to intelligently observe and determine the course of disease, and anticipate with reasonable accuracy its probable termination.

Thanking you kindly for your patient and respectful attention, and trusting to a generous estimate of what has been said so imperfectly, I shall close my remarks by expressing the hope, that at no distant day scientific medicine will fully deserve and receive the commendation, confidence and support of all mankind.



